

and truss belts for slighter cases and colectomy for the rest. Complete colectomy is a serious operation. Very few are done, for it is not a popular operation among surgeons. The mortality is not easily ascertained. Many cases recover and are greatly benefited while some cases die. There is a third class in which there is neither death nor recovery but an almost hopeless discomfort. Clark records "final results" in 12 cases: in 6 of these it was not satisfactory. The author searches for alternatives for abdominal operations, for various kinds are done and toxemia previously present disappears. It has been said of these types of operations that their good results have been produced by freeing the ileal effluent. Waugh attributes the impairment of mechanical efficiency of the bowel to the elongated retained mesentery of the ascending colon, a developmental survival present in 20 per cent. of individuals born. An easy, safe operation—fixation of anterior colon, cures and symptoms of stasis disappear. The author has carried this operation out in several cases with immediate improvement. Surgery is not the only remedy advocated. Diets, paraffin, massage, exercises, posture, spa treatment, removal of toxic foci, all have their place in treatment of intestinal stasis. Prevention should be our final goal. It should be instituted in babyhood and continue for the earlier the treatment the better, because then the less severe and more effective it is.

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**Acidosis in Operative Surgery.**—FARRAR (*Surg., Gynec. and Obstet.*, 1921, xxxii, 328) says that there is great need for collaboration between the surgeon and the physiologist, as the time may be all too short for the study of a condition suddenly confronting the surgeon at or immediately following an operation. Acidosis is a term used to signify an impoverishment of the body in bases. The alkali reserve (bicarbonates of the blood) is the criterion of the acid-base balance of the body. The determination of the alkali reserve is readily made by Van Slyke's method. (The number of cubic centimeters of carbon dioxide gas which 100 c.c. of blood plasma will take up.) A high carbon dioxide combining power of the blood is of the greatest importance for the maintenance of lung ventilation during operation. The range of the carbon dioxide combining power of the blood in women (150 cases) is 55.2 c.c. to 69.9 c.c. per 100 c. c. of the blood plasma or about 8 points lower than Van Slyke found for men. It follows, therefore, that acidosis is more frequent following operations in women than in men. The fall in alkali reserve during operation depends not only upon the anesthetic and the duration of the operation but upon the nature of the operation and the occurrence of hemorrhage and shock. Moreover, the fall in alkali reserve bears a close relation to the fall in blood-pressure and pulse pressure. If a fall in blood-pressure is prevented, there is a saving in alkali reserve. A solution of glucose given intravenously during an operation at the rate of 0.8 gram of glucose for every kilogram of body weight each hour of the operation will lessen the acidosis incident to operation by promoting metabolism. Vomiting is diminished and diuresis promoted by this measure. Glucose will appear in the urine in one-half hour if this rate has been exceeded. A solution of gum acacia (6 per cent.) in a glucose solution (20 per cent.), if given at a subtolerant rate the entire time of operation, is an aid to the maintenance of blood-pressure.

## PEDIATRICS

UNDER THE CHARGE OF

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**A Mild Chronic Nephritis in Children.**—HILL (*Jour. Am. Med. Assn.*, August 28, 1920) gives the test that he uses to determine the presence of neuter nephritis. In mild cases a fixation is shown where the phenol-sulphonephthalein test is normal. A fixation does not necessarily mean a severely damaged kidney, but it is an indication at least that the kidney function is abnormal. The child is put on a full normal diet containing a considerable amount of protein, especially at the noon meal. A capsule containing 1 gm. of salt and a 2 grain pill of caffeine sodium benzoate is given with each meal, to take the place of the tea or coffee used in the adult test diet. This gives a diet containing a considerable amount of salt, protein and diuretic material, all of which will stimulate the kidney to its maximum effort. Exactly 10 ounces of fluid is given with each meal and no fluid or food whatever is given between meals. The urine is collected in two-hour periods from 7 A.M. to 7 P.M. and the night urine from 7 P.M. to 7 A.M. Then all that is required is to record the specific gravity of each sample of urine. The normal response shows a wide variation in gravity between the different specimens; in fifteen normal children there was always a variation of at least eight points between the highest and the lowest. The night urine in normal children is small in amount, and almost always has a specific gravity of 1020 or over. The child with damaged kidneys on the other hand, is unable to vary the concentration of the urine in this way, and the gravity of the individual specimens may vary only one or two points. The fixation may be at a high or at a low level, and may be high or low in the same patient at different times. It is apparently the fixation of the gravity that is important and not the level at which it is fixed. This is the most practical test for everyday use. There is nothing complicated about it. The food does not have to be weighed, nor is it necessary for the patient to eat all of it. It is merely essential that he consume a good full diet. The rules for fluid intake must, however, be strictly adhered to. As regards blood urea, the writer thinks that the fixation is shown even in cases where there is not sufficient damage to give marked urea retention.

**Weight and Height in Relation to Malnutrition.**—EMERSON and MANNY (*Arch. Ped.*, August, 1920) point out that malnutrition is a definite clinical entity with characteristic history, definite symptoms and pathological physical signs. Clinical evidence shows that the physical signs that may best serve to identify this group of malnourished children is the relationship between weight and height. The age factor is of secondary importance, and is mainly serviceable in selecting cases stunted by constitutional disabilities such as syphilis, tuberculosis, deficient thyroids, the effect of certain drugs, convalescence from long

illness and the like. The tables derived from the studies of Boas and Burk represent the most extensive records of weights and heights made. Recent studies show that they are essentially true averages for museum groups of American children. The Boas-Burk and other tables in general use are vitiated by the measurements of large numbers of malnourished children, whose measurements lower the averages of weight and height, and make them of only relative value as standards. By setting the Boas-Burk figures the depression of averages is to a great part offset. Individual variations in the relationship of weight to height is of enough importance to make it necessary to use a zone system rather than any single line as a basis of reference. After various experiments at determining zone boundaries, clinical evidence is best satisfied by lines lying between 7 per cent. below and 20 per cent. above the "set-forward Boas-Burk figures." Outside of the central zone are found, on the one hand, the obese, and on the other, the malnourished. Within the zone are still a considerable number of malnourished children requiring individual diagnosis. The malnourished child selected by this rule of habitual 7 per cent. underweight for height form almost without variation 20 to 40 per cent. of any group of children in school and pre-school periods. When tables have been constituted from sufficient numbers of children proved to be normal, the line of average weights and heights will lie somewhere between the set-forward Boas-Burke figures and those represented by a line drawn midway between the 7 per cent. underweight and the 20 per cent. overweight boundaries. This has already been confirmed by the special studies of Baldwin and Robertson.

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**The Circulatory Reaction to Graduated Exercise in Normal Children.**  
 —WILSON (*Am. Jour. Dis. Children*, September, 1920) gives the technique for making this study, which consisted of more than five hundred test exercises comprising one hundred and fifty complete experiments. The test exercises consisted of swinging one or two iron dumb-bells (3, 4, 5, 7 and 10 pounds each) from the floor to the full stretch of the arms overhead and back again between the legs, at a constant rate of two seconds for each swing. This was repeated from ten to sixty times to increase the amount of work. Each child performed at one visit three or four of these exercises graded from moderate to severe, until the maximum effort was approached as evidenced by marked breathlessness, flushed face, perspiration and fatigue. This was corroborated by an additional exercise of slightly increased intensity. The possible influence of one exercise upon another was eliminated by allowing a full rest between each exercise, and by varying the order of exercises on subsequent visits. The pulse rate at the wrist was taken by an assistant before each exercise until it remained constant. It was taken immediately after exercise for fifteen seconds and again at the end of one hundred and ten seconds after exercise for twenty seconds. From these counts the rate per minute immediately after exercise and at the end of two minutes were calculated. A pulse rate within six beats of pre-exercise rate was considered normal. If the pulse was not normal at the end of two minutes, it was taken at one-half minute intervals for from three to five minutes. The systolic blood-pressure after exercise was taken at five- and ten second intervals. Before exercise the systolic

blood-pressure was read until a constant level was reached and at frequent intervals for two minutes. From these experiments upon the circulatory reactions after exercise, it was found that the circulatory reactions to graduated exercise on normal children are similar to those in the adult. The circulatory reactions immediately following similar graduated exercises of two day intervals over a period of weeks were as a rule constant. The time required for the pulse rate to return to normal does not give much information as to the exercise tolerance of the child. A type of systolic blood-pressure after exercise showing an increased rise, delayed rise and summit, and a prolonged fall, and associated with symptoms of marked dyspnea and fatigue would seem to indicate that the exercise tolerance of the particular child has been reached or exceeded.

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**A Dental Clinic for Children in a Settlement.**—GUTHAIE (*Jour. Am. Med. Assn.*, November 6, 1920) offers a report based on the case records of more than 8000 children, ranging in age from infancy to the sixteenth year. The records showed the age, sex, race, nutrition and history of previous infections. The school history was also noted. Record was made in every case of the number of deciduous and permanent teeth, together with the presence of cavities, abscesses or sinuses, and their location. Special dyscrasias, if present, were noted, as well as abnormal frenum, fifth cusp, and geographic tongue. Roentgen findings and Wassermann reports were recorded when made. It was found that there was a marked reduction in the number of cases of infectious diseases in the children who belonged to this clinic. There was not an epidemic in this neighborhood since the work was instituted. Two special groups of children were studied. One consisted of those who were known to be tuberculous, and the other of those who were proved cases of syphilitic infection. These were observed in order to determine the value of thorough dental care in these types of cases. In the tuberculosis group 95 per cent. of the deciduous teeth had to be removed before the eighth year on account of abscesses. In the syphilitic group only 40 per cent. had to be removed. More cases of retarded absorption of the deciduous roots were noted in the syphilitic group than in the tuberculous. In 9 cases of 60 at the thirteenth year roentgenograms were made to determine the condition of the deciduous roots. These disclosed a beginning absorption. In these 9 cases the 10 deciduous teeth were extracted first on the right side and after about six weeks the ten deciduous teeth on the left side were removed. In a few months the permanent teeth were erupted in correct position. Ulcerative stomatitis occurred with greater frequency among the children from the parochial schools. These patients were all isolated in the hospital and treated with bactericidal measures against anaerobic organisms. There were no deaths but several cases of marked deformity ensued as a result of the extensive operative procedure necessary to overcome the infection.

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**Meningitis Caused by Lead Poisoning in a Child of Nineteen Months.**—SRONG (*Arch. Ped.*, September, 1920) reports this case which was admitted to the hospital for a persistent vomiting and a mild diarrhea and a temperature of 99°. The history was that about ten days pre-